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1876/77

Circular and Catalogue

OF

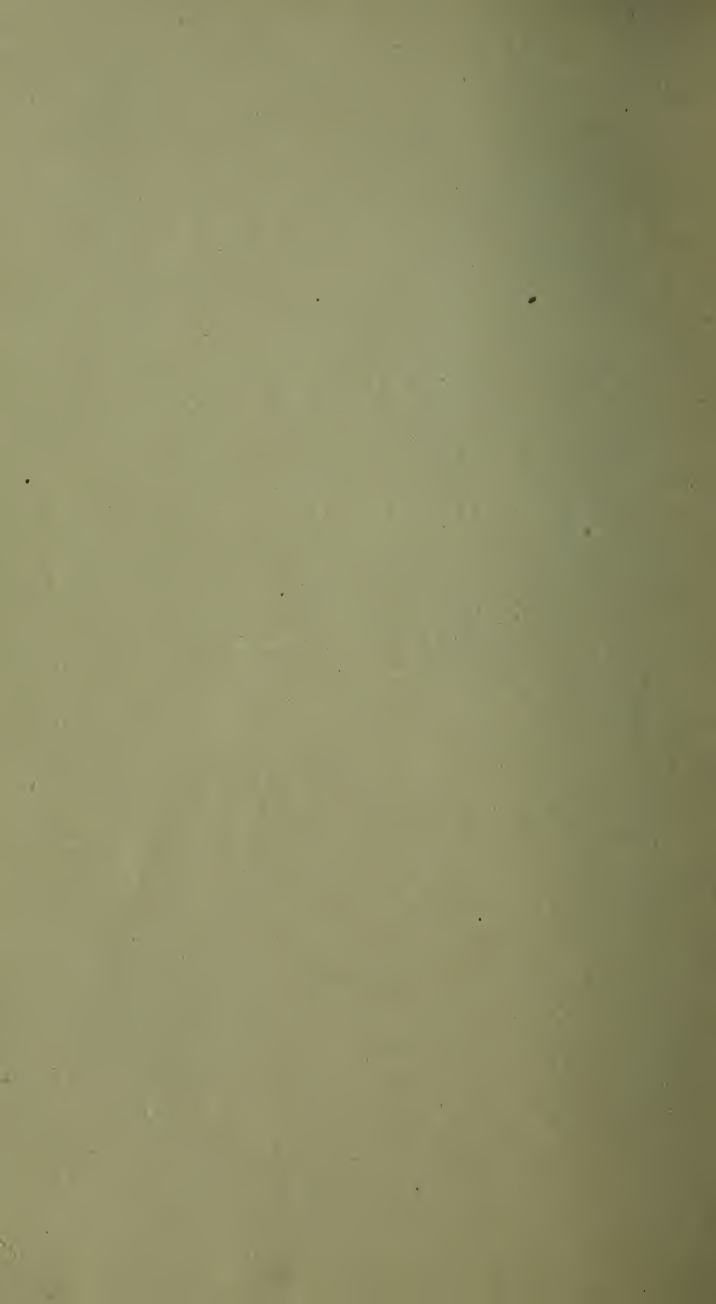
UNION COLLEGE,

EIGHTY-SECOND YEAR.

76-77



ALBANY:
J. MUNSELL, 82 STATE ST.
1877.



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OF

UNION COLLEGE,

1876-7.



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J. MUNSELL, 82 STATE ST.

1877.

Union University.

UNION COLLEGE was incorporated by the Regents of the University of the State of New York, on the 25th day of February, 1795. It was the second college incorporated in the state, and the first north of the city of New York, and west of the Hudson river. It received its name from the circumstance that several religious denominations coöperated in its organization, and was the first college in the United States which was not of a strictly denominational character. It has continued from its foundation to be the representative institution of Christian unity.

Union College acquired, by its charter, full University powers ; but the creation of post graduate institutions at Schenectady had not been found practicable. Schools of Law and Medicine and also an Astronomical Observatory had long existed at Albany, the distance between which city and Schenectady, estimated in time, is less than that which in many cases separates the professional schools from the other departments of a university. The arrangement naturally suggested by these circumstances was that the professional schools and the Observatory at Albany, should be united with Union College under the Charter and Board of Trustees of the latter. The union of the several institutions was thus consummated by the incorporation of Union University, A D., 1873.

Trustees of Union College.

Incorporated A. D. 1795.

Ex-Officio. { His Excellency LUCIUS ROBINSON, *Governor.*
 Hon. WILLIAM DORSHEIMER, *Lieut. Governor.*
 Hon. JOHN BIGELOW, *Secretary of State.*
 Hon. FREDERICK P. OLCOTT, *Comptroller.*
 Hon. CHARLES N. ROSS, *Treasurer.*
 Hon. CHARLES S. FAIRCHILD, *Attorney General.*

Also Governors of Union University. { JAMES BROWN, ESQ.
 Hon. WILLIAM W. CAMPBELL, LL.D.
 Rev. EBENEZER HALLEY, D.D.
 Rev. J. TRUMBULL BACKUS, D.D., LL.D.
 Hon. CLARKSON N. POTTER, LL.D.
 Hon. PLATT POTTER, LL.D.
 Hon. CHARLES C. NOTT.
 WILLIAM TRACY, LL.D.
 Hon. WILLIAM F. ALLEN, LL.D.
 JOSEPH W. FULLER, ESQ.
 Rev. ELIPHALET NOTT POTTER, D.D.
 Hon. THOMAS W. OLCOTT.
 Gen. FRANKLIN TOWNSEND.
 SILAS B. BROWNELL, ESQ.

HARVEY J. KING, ESQ.,	Term of office expires June	1877
JOHN A. DEREMER, ESQ.,	"	1878
THOMAS ALLEN, LL.D.,	"	1879
Rev. JAMES RANKINE, D.D.,	"	1880

JONATHAN PEARSON, *Treasurer.*

EDGAR M. JENKINS, *Assistant Treasurer and Secretary.*

VISITORS OF THE NOTT TRUST FUND.

URANIA E. NOTT.	REV. TIMOTHY G. DARLING.
REV. JOHN NOTT, D.D.	REV. WILLIAM PAYNE, D.D.
HON. W. W. CAMPBELL, LL.D.	

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Governors of Union University.

Incorporated A. D. 1873.

Hon. THOS. W. OLCOTT, Chairman,
President of the Dudley Observatory.

THOMAS HUN, LL.D.,
Secretary of the Dudley Observatory.

Hon. AMASA J. PARKER, LL.D.,
President of the Albany Medical College.

ROBERT H. PRUYN, LL.D.,
Trustee of Albany Medical College.

Hon. WILLIAM F. ALLEN, LL.D.
Trustee of the Albany Law School.

HENRY H. MARTIN, ESQ.,
Trustee of the Albany Law School.

UNION COLLEGE is represented by its Permanent Trustees.

VISITORS AND CHANCELLORS.¹

Rt. Rev. HORATIO POTTER, D.D., LL.D., D.C.L., — 1875.

Hon. JOHN A. DIX, — 1874.

Hon. HORATIO SEYMOUR, — 1873.

Rev. ELIPHALET N. POTTER.

¹ An Honorary Chancellor is appointed each year who will deliver an address at the annual Commencement of Union College, and will thereafter be a member of a Board of Visitors of which the President of Union College, as First Chancellor of the University, is Chairman.

Union College Calendar.

1877.

- JAN. 3 — Winter Term begins.
- MAR. 30 — “ “ ends.
- APRIL 3 — Spring “ begins.
- JUNE 27 — “ “ ends.
- “ 28, 29 — Examinations for Admission.
- “ 24 — Sunday, Baccalaureate Sermon
- “ 26 — Tuesday, Prize Speaking.
- “ 26 — Trustees, Phi Beta Kappa and Alumni day
- “ 27 — Commencement.
- SEPT. 17, 18 — Examinations for Admission.
- “ 19 — Fall Term begins.
- DEC. 22 — “ “ ends.

Union College.

Faculty.

REV. ELIPHALET NOTT POTTER, D.D.,

President and Lecturer on Christian Ethics, Evidences and History.

TAYLER LEWIS, LL.D.,

*Nott Professor (No. 6) of the Oriental Languages, and Lecturer on
Biblical and Classical Literature.*

ISAAC W. JACKSON, LL.D.,

Nott Professor (No. 2) of Mathematics.

JOHN FOSTER, LL.D.,

Nott Professor (No. 8) of Natural Philosophy.

JONATHAN PEARSON, A.M.,

Professor of Agriculture and Botany.

HENRY WHITEHORNE, A.M.,

Nott Professor (No. 1) of the Greek Language and Literature.

WILLIAM WELLS, LL.D.,

Professor of Modern Languages and Literature.

MAURICE PERKINS, A.M., M.D.,

*Nott Professor (No. 3) of Analytical Chemistry, and Curator of the
Museum.*

REV. GEORGE ALEXANDER, A.M.,

Acting Professor of Logic, Rhetoric, and Mental Philosophy.

CADY STALEY, A.M., C.E.,

Professor of Civil Engineering.

HARRISON EDWIN WEBSTER, A.M.,

Professor of Natural History.

REV. ROBERT T. S. LOWELL, D.D.,

Professor of the Latin Language and Literature.

CAPT. THOMAS WARD, U.S.A.,
Professor of Military Science and Director of Physical Culture.

ISAIAH B. PRICE, C.E.,
Adjunct Professor of Physics.

CHARLES JONES COLCOCK, C.E.,
Tutor in Mathematics.

JONATHAN PEARSON, A.M.,
Treasurer and Librarian.

EDGAR MARSHALL JENKINS, ESQ.,
Assistant Treasurer and Registrar.

HENRY COPPEE, LL.D.,
Lectures on History and English Literature.

REV. RANSOM B. WELCH, D.D., LL.D.,
Lecturer on English Language.

REV. EDWARD A. WASHBURN, D.D.,
Lectures on Literature and Art.

WILLIAM A. POTTER,
Lecturer on Architecture.

PROF. M. WENDELL L'AMOREUX, A.M.,
English Composition and Declamation and Assistant Librarian.

ERASTUS D. PALMER, A.M.,
Lecturer on Sculpture.

REV. JOHN COTTON SMITH, D.D.,
Powers Lecturer.

PREPARATORY DEPARTMENT.

CHARLES STORRS HALSEY, A.M.,
Nott Professor (No. 7) Principal of the Classical Institute

SAMUEL BURNETT HOWE, A.M.,
*Adjunct Nott Professor (No. 4) Principal of Union School and
 Superintendent of the Schools of Schenectady.*

Information.

COURSES OF STUDY.

1. *Classical Course.*

The Classical course is the usual baccalaureate course of American Colleges. Students may be permitted to pursue additional studies in either of the other courses.

2. *Scientific Course.*

In the Scientific course the modern languages are substituted for the ancient, and the amount of mathematical and English studies is increased.

3. *Eclectic Course.*

An Eclectic course, consisting of studies selected at pleasure from the preceding courses, may be taken by any one who, upon examination, is found qualified to pursue it. Upon its completion a certificate of attainment will be given.

4. *Instruction in the Oriental Languages.*

Instruction in Hebrew, Syriac, Arabic and the cognate tongues will be given by Dr. Tayler Lewis to any desiring it.

SPECIAL DEPARTMENTS.

1. *The Department of Civil Engineering.*

In this department such instruction in the theory and practice of Civil Engineering is given as will qualify the student for immediate usefulness in the field and office in a subordinate capacity, and at the same time prepare him to fill satisfactorily

the higher positions in the profession, after a moderate amount of experience in the routine of practice. Candidates for a diploma are required to sustain an examination on the leading points of all the studies of the course. The student in this department enjoys advantages nowhere surpassed in its collections of models, instruments and books, the accumulations of many years by the late Professor Gillespie, and also in unusual facilities for acquiring a practical knowledge of instrumental field work. To young men of good capacity and high character, in need of pecuniary assistance, special (additional) aid will be given in this as in all other departments of the College. For further information see the circular of the Engineering School.

2. Chemical Department.

The course in this department includes instruction in Theoretical and Experimental Chemistry and Systematic Qualitative and Quantitative Analysis, in all their branches; and in the applications of the science to the arts and manufactures. It is especially adapted to students of Agriculture, Medical Students, Pharmaceutists, Manufacturing Chemists, Mineralogists, Metallurgists, etc.

3. Department of Natural History.

The regular course in the Department of Natural History includes instruction in Physiology, Zoology, and Geology. Students desiring to pursue these studies further than is practicable in the regular course will be furnished with the necessary materials, and allowed to work under the instructions of the Professor without additional expense.

4. Department of Agriculture.

Instruction is given in Agriculture, Botany, etc., without extra charge. Union College possesses an extensive garden and a College farm.

5. *Meteorological Observatory.*

Meteorological Observations are regularly made at the Dudley Observatory. A large quantity of rare and costly apparatus has lately been secured ; together with the funds necessary for the erection of separate buildings. Instruction will be given to special students.

6. *The Gymnasium,*

Lately erected, and the department of Physical Training and of Military Instruction are under the charge of an officer of the United States Army, a graduate of the West Point Military Academy.

II. ADMISSION.

Candidates for admission must present testimonials of good moral character, and must be at least sixteen years of age. If not previously vaccinated, they will be required to become so before joining the college.

Examinations for admission take place in presence of three College officers.

The stated times for such examinations are the two days (Thursday and Friday) following commencement day and the last two days (Monday and Tuesday) of each vacation. The full dates will be found in the Calendar. By observing and conforming to these appointed times, applicants will greatly promote their own convenience and interest, as well as those of the examiners.

Candidates for the Freshman class in the Classical course will be examined in English Grammar ; Arithmetic (Davies's University, or an equivalent) ; Algebra (to equations of the second degree) ; Plane Geometry, five books ; Allen & Greenough's

Latin Grammar including Prosody; Caesar's Gallic War, four books; Virgil's *Æneid*, six books; Cicero, six Orations including Milo; Sallust's Catiline, or Jugurtha; Leighton's Latin Composition (Prose); Goodwin's Greek Grammar and Leighton's or Jones's Greek Composition; Xenophon's *Anabasis*, three books; Homer's *Iliad*, one book; and Ancient Geography. The attention of instructors is particularly directed to the necessity of a full and accurate knowledge of the Greek and Latin Grammars. A failure in the acquisition of this knowledge will preclude the admission of applicants.¹

It is desirable that those intending to pursue the Classical course should enter at the commencement of the Freshman year, and that they should not be burdened by deficiencies in the preparatory course, which must be made up before the student can be in full standing as a member of college, and which can be made up only by expending time and strength that are fully demanded by the regular studies of the course.

Candidates for the Freshman class, in the Scientific course, will be examined in English Grammar, Modern Geography, Arithmetic, Algebra to equations of the second degree, and Plane Geometry, five books.

Candidates for any other class will also be examined in all the studies previously pursued by that class, as shown in the course of studies as given below.

Students from other colleges, in addition to passing a satisfactory examination, will be required to present a letter of honorable dismissal.

It is very important that candidates should be thoroughly prepared, especially in grammatical and elementary knowledge. If in their preparation, they have more time than is required for

¹ The diversity of books of elementary instruction is one of the great difficulties a college has to meet. To avoid this, all instructors, who intend to send pupils to Union College, are requested to use the grammars and elementary books mentioned here.

this purpose, it is desirable, for obvious reasons, that they should not anticipate the college studies, but apply themselves to other subjects or authors.

If a candidate upon examination shows such proficiency as to enable him to proceed with the studies of the class for which he offers himself, he will be received on probation, and enjoy all the privileges of the class.

When a sufficient time has elapsed for the formation of a judgment, if his scholarship, conduct and deportment warrant it, he will be admitted to full standing.

III. DEPARTMENTS OF INSTRUCTION.

1. *The Greek Language and Literature.*

The course of instruction in this department extends through the Freshman and Sophomore years, and the first and second terms of the Junior year. The object kept constantly in view throughout the course, is not merely to teach so many works of an unknown tongue to a succession of classes, but to instruct and educate the pupil by a system of mental training grounded upon the works of the most noble poets, dramatists, historians and philosophers of the ancient world. To this end the pupil is taught not only to translate an author into accurate and idiomatic English, to analyze with great care the grammatical construction, and compare it with that of his own tongue, but especially to obtain a thorough knowledge and critical appreciation of the authors selected for his use.

Although there must be a general uniformity in the order in which different authors are read, yet no particular works are assigned to the several terms. The proficiency of each class determines the character of the book to be read.

During the Senior year courses of lectures are delivered by Professor Lewis on Greek Philosophy, Greek Poetry and Greek Literature in general.

2. *The Latin Language and Literature.*

The course of teaching in this Department, going through the Freshman and Sophomore years and the first and second terms of the Junior year, takes in so much of the better Latin classics (in prose and poetry) and as much practice of Latin writing as the time will allow to be well done. It is aimed to acquaint growing minds with the highest and strongest thought and with the most beautiful and finished expression of Roman men of genius and education; and to familiarize the student with the structure and capabilities of a language which if in some respects inferior is also in some respects superior to our own. The study is illustrated by the history and topography directly involved and by the religion, polity, science and warfare of nations as well as by the character and achievements of individuals. Light is thrown upon the Roman Language and Literature from our own, while in turn our own authors and their works are illustrated by those of Rome. The course is graduated for the several years and although, nearly uniform in amount is varied by equivalent selections with different classes.

During the Senior year, lectures are delivered by Dr. Lewis, on Latin Literature and Philosophy.

3. *Modern Languages.*

The Modern Languages supply the linguistic training of the Scientific course, and are regular daily studies during the Freshman, Sophomore and Junior years; one hour per day being given to each class, and the studies alternating according to the schedule.

Instruction is imparted by exercises in translation (written and oral), conversational practice, and familiar lectures on the standard authors read.

The French Language is a regular study through six terms, beginning with the first term Freshman. The text book mainly used is Pujol's *Complete French Course*. At a later period contemporaneous French Literature is read.

The German Language extends through six terms, commencing the first term Sophomore. The text books are Comfort's *Grammar* and *Course of Literature*, Whitney's *Grammar*, Woodbury's *Reader*, and the Poets *Schiller* and *Goethe*, and Whitney's German Literature.

The Italian Language is studied during the second and third terms Sophomore. The text books are Fontana's *Grammar* and Foresti's *Reader*.

The Spanish Language is taught during the second and third terms Junior. The text books are Ahn's *Spanish Grammar* and Velasquez's *Reader*. The last two languages are, however, voluntary studies, and classes are formed only when the demand is sufficient to justify it.

In addition to the above text books, are recommended : Spiers and Surenne's *French Pronouncing Dictionary*, Adler's *German and English Dictionary*, Graglia's *Italian Dictionary*, and Velasquez's *Spanish Dictionary*.

The hours for the recitations in the Modern Languages, are so arranged, when possible, that they may also be taken by regular classical students.

4. *Oriental Languages.*

A class in Hebrew is formed every year by Prof. Lewis.

Instruction in Syriac, Arabic and the cognate tongues is also given by him to any desiring it.

5. *Mathematics.*

The studies of this department are arranged as follows :

FRESHMAN YEAR.

First Term... Algebra, to "Series."—(Bourdon).

Second Term.. Algebra (completed).

Third Term.. Geometry—books VI to IX,—Trigonometry (Jackson).

SOPHOMORE YEAR.

First Term... Descriptive Geometry (scientific).

Second Term.. Conic Sections (Jackson) — Mensuration or Descriptive Geometry (scientific).

Third Term.. Analytical Geometry or Surveying — (Scientific).

JUNIOR YEAR.

Second Term... Differential and Integral Calculus.—(Voluntary).

6. *Natural Philosophy and Astronomy.*

The instruction in this department commences with the third term of the Sophomore year. Students in the Academical department, both of the Classical and the Scientific course, and those in the Engineering department, recite in two divisions, one hour being given to each, four days in the week, and the subjects succeed each other, in the following order :

SOPHOMORE YEAR.

Third Term... Statics and Dynamics.—(Jackson).

JUNIOR YEAR.

First Term.... Mechanical "Work." Hydrostatics, Hydrodynamics Pneumatics.—(Jackson).

Second Term... Heat, the Steam Engine, Electricity, Meteorology.—(Foster).

Third Term... Acoustics, Magnetism, Galvanism, and Electro-Magnetism. (Foster).

SENIOR YEAR.

First Term.... Optics, Wave theory of light and radiant heat.

Second Term... Astronomy.—(Gummere).

To secure at once precision and fullness, the instruction is mainly given from recently prepared text books. Frequent lectures are, however, delivered either to furnish illustration and proofs of principles by experiment, or to amplify particular subjects. Thus, after the completion of Statics and Dynamics, several lectures are devoted to mechanical "work," in order that not only the construction and theory, but modes of determining the *efficiency* of the various hydraulic and pneumatic machines may be understood. All lectures are required to be written out by the students in full from the notes, and submitted for inspection. Numerous problems are also given on all the subjects, and are mostly so constructed that the calculated results may be verified by experiments before the class. To test the accuracy of the knowledge gained, and to ensure its ready command, several written examinations are required in each term.

In most of the branches included in this department the apparatus is sufficient for very complete experimental illustrations, and through the liberality of friends of the College, important additions of French, English and American instruments have been made within the present year.

7 *Chemistry.*

In the Undergraduates' department, chemistry is taught by daily lectures and recitations during the third Junior term, and the first and second Senior terms.

Undergraduates are also permitted to attend the daily two hour course of experimental Chemistry at the Laboratory; in connection with which there is an extra charge for the material, etc., used.

The NOTT *Laboratory* is open for special students, in all branches of Chemistry; particularly students of Agriculture,

Medical students, Pharmacutists, Manufacturing Chemists, Mineralogists, Metallurgists, students of Medical Jurisprudence, etc.

Students who desire to devote but a portion of their time to Chemistry, can pursue at the same time other studies in the Collegiate course, either collateral, as Geology, Mineralogy, etc., or any others. No previous knowledge of the science is required, though highly desirable.

The course will include instruction in Theoretical and Experimental Chemistry, and systematic Qualitative and Quantitative Analysis, in all their branches and in the applications of the science to the arts and manufactures.

The more thorough the previous acquaintance of the student with Mathematics, Mechanics, Physics and General Chemistry, the better.

Text Books and Books of Reference.

Cooke's Chemistry.	Knapp's Chemical Technology.
Craft's Qualitative Chemical Analysis.	Dana's Mineralogy.
Fresenius's Analysis.	Gmelin's Hand-Book of Chemistry.
Cooke's Chemical Physics.	Muspratt's Chemistry applied to Arts and Manufactures.
Miller's Chemical Physics,	Lehmann's Physiological Chemistry.
Miller's Elements of Chemistry.	
Dalton's Physiology.	
Percy's Metallurgy.	Regnault's Elements de Chimie.

Fees for full course, \$35 per term; for half-day course, \$25 per term.

Students are not required to purchase the apparatus which they use, but are charged for what they consume and injure.

They also pay for the chemicals which they consume. The above extras amount to from \$2 to \$20 a term.

For fuller information, address Prof. MAURICE PERKINS, M.D.

8. *Natural History.*

PHYSIOLOGY is taught in the second Junior term to the whole class by recitations and by lectures on Comparative Anatomy and Physiology. The subjects are illustrated by preparations and dissections.

ZOÖLOGY is taught in the Scientific course the third Junior term, by recitations and lectures. The work is illustrated by constant exhibition of specimens and dissections in the class room.

GEOLOGY is taught during the first term of Senior year by a daily course of recitations and lectures.

MINERALOGY is taught during the third term by a course of practical lessons, illustrated by a complete set of models of crystals and a series of six hundred specimens for determination by crystallographic and blowpipe examination.

The facilities for instruction in these departments have been largely increased by the addition to the College Cabinet of the WHEATLEY *Collection of Minerals and Shells*, purchased by E. C. DELAVAN, Esq., for ten thousand dollars, and presented by him to the College.

BOTANY is taught during the Summer term, both from textbook (Gray's) and practically, in the field.

9. *Logic, Rhetoric, and English Literature.*

The instruction in Logic and Rhetoric, includes the use of text books, lectures, and practical exercises in declamation and the various forms of composition. In the study of English Literature, it is the aim to secure an acquaintance with the historical development of the language, and the course of English

thought as expressed at different periods, in the works of representative men.

The Freshmen have frequent exercises in declamation and the elementary forms of composition, and during the Third term they study a text book on Rhetoric. In the Sophomore year the study of Rhetoric is continued; and the subject is carried still further in the Junior year in connection with Logic. During the Junior and Senior years the rhetorical exercises consist of essays, discussions and declamation; and the Classics of English Literature and its history, are made the subjects of lectures and of study.

The text books and books of reference are as follows:

IN RHETORIC:—Day's *Art of Composition, Praxis and Art of Discourse*; Hart's *Composition*; Campbell's *Philosophy of Rhetoric*; Coppee's *Rhetoric and Logic*; Whateley's *Rhetoric and Logic*; Theremin on *Eloquence*.

IN ENGLISH LITERATURE:—Clark's *English Language*; Shaw's *Manual of English Literature*; Marsh's *Lectures on the English Language and Literature*; Craik's *English Literature*; Trench's various works; Milton's *Paradise Lost*; Chaucer's *Legende of Goode Women*; Taine's *English Literature*; Hart's *Manual of English Literature, and Manual of American Literature*, and Coppee's *English Literature*.

10. *History and Political Economy.*

It is proposed to give the student a knowledge of the facts and philosophy of history, both by lectures and recitations. In the department of political economy he is taught the fundamental principles, conflicting theories and practical issues of the subject and thus is prepared for the intelligent prosecution of the study.

11. *Mental and Moral Science.*

The elements and history of mental and moral science are taught by the use of text books, accompanied by oral comments,

explanations and illustrations. The effort is made to give the student an adequate knowledge of the history and present position of mental and moral philosophy; to accustom him to the modes of reasoning and the terms used in the discussion of such subjects; to acquaint him with the nature and value of the problems dealt with, and the methods proposed for solving them; and thus to prepare him to understand the writings of the leading authors upon the subject, past and contemporary, and to follow out with intelligence and accuracy his own philosophical inquiries.

12. *Religious and Biblical Instruction.*

The President has in charge the general duties of Chaplaincy and Pastoral care of the College.

The religious teaching, while distinctly and earnestly Christian, is not denominational, but as heretofore is consistent with the design and chartered title of the College, as the representative Institution of the principles of Christian Unity.

During the Senior year there will be given by the President a course of instruction upon the Claims and Evidences of Revealed Religion.

Dr. Lewis conducts on Saturday evening a Bible Class for the benefit of the students, and delivers to the Senior Class a course of lectures on Biblical Literature.-

Daily service is held in the College Chapel.

IV. MISCELLANEOUS INFORMATION.

1. **TERMS AND VACATIONS.**—There are three Terms of the average length of thirteen weeks. Commencement takes place on the fourth Wednesday in June, and the First Term begins twelve weeks after that time. This term is followed by a Vacation of nearly two weeks, embracing the Christmas holidays, and

there is also a brief recess at Easter. The Second Term consists of twelve weeks. The Third Term ends with Commencement.

2. PAYMENTS AND EXPENSES.—The College bills must be paid at the beginning of each term. In case such payment is not made within the first week of the term, the Treasurer is instructed to inform the parent or guardian of the delinquent.

Students, unless from another College, pay for entrance into the Freshman class, \$5 ; into the Sophomore class, \$7 ; into the Junior class, \$9 ; into the Senior class, \$12.

No retrospective expense is incurred by entering in advance.

The College bills for tuition, etc., are \$40 per term ; for the Chemical instruction, as on page 24 ; The expenses of instruction, board, lights, washing, text books, etc., during the three terms of thirty-nine weeks, may vary in amount from \$250 to \$350. Furniture can be bought and resold on leaving, or hired of the college servants. The President desires it to be understood that special provision is made in aid of the boarding and other expenses of students of high character and attainments needing assistance.

3. RESIDENCE AND DISCIPLINE.—Students are expected to reside in the main buildings, under the immediate supervision of the President and Professors. No student can reside elsewhere without special permission.

The discipline of the Institution is moral and parental. Disgraceful punishments are not inflicted ; but no young man who indulges in gaming, intemperance, or other vice, who is absent from his room at night, or who habitually neglects his studies, can be allowed to remain.

Parents or guardians are requested either to appoint a special guardian for their sons or wards, or to deposit all funds intended for their use with the Treasurer or Registrar of the College, who will act without charge as fiscal guardian.

An account of the delinquencies of each student, and of his daily attendance, conduct and scholarship, is kept by the Registrar. The result, determining his place on the Merit Roll, is reported at the close of each term, or more frequently, to his parent or guardian.

Each student is required to return punctually at the beginning of the term and report himself at the Registrar's office; and until he thus reports himself he is considered as absent, and so marked on his bill. A similar report is required after any temporary absence from sickness or by permission.

Parents are requested to inform the Registrar, by their sons, what church they wish them to attend.

V. SCHOLARSHIPS.

1. *Ordinary Scholarships.*

To a large class of students, Union College presents extraordinary advantages in its numerous scholarships. In the scholarships of the first grade, the incumbents, on the condition of good conduct and satisfactory application to study, receive at the end of each term a credit on the books of the Registrar, to the full amount of the term bill.

In the scholarships of the second grade, the incumbents, on the same condition, receive a credit to the amount of half the term bill.

These scholarships are accessible, under certain restrictions, to all who present the requisite certificates of character, and sustain the examinations required for admission to the regular classes of the College.

2. *Prize Scholarships.*

Among the several classes of scholarships founded by the late Dr. Eliphalet Nott,¹ is a class of Prize Scholarships.

¹ Few of those are yet actually endowed, but their ultimate endowment is secured by the prospective sale of valuable lands.

An examination of candidates for these scholarships is held early in the first term of the Freshman Year, and also at a later period in the same year, and the appointments are made according to certain rules prescribed by the founder.

The pecuniary emolument of a Prize Scholarship is thirty-five dollars a term, or four hundred and twenty dollars for the whole College course, a provision which enables the incumbent, after paying his College bills, to retain the sum of one hundred and twenty dollars.

The possession of a Prize Scholarship being a special distinction, the incumbent is expected and required to maintain throughout his whole course, high standing as a student in all respects.

Among the rules which the incumbent is required to observe is one which forbids the use, during the period of incumbency, of intoxicating liquor as a beverage and of tobacco in all its forms.

VI. MEDALS AND PRIZES.

1, THE BLATCHFORD ORATORICAL MEDALS.—*Hon. R. M. Blatchford, LL.D.*, has founded an Oratorical Prize, consisting of two Gold medals, of the value of the interest of \$1,000, to be given to the two members of the graduating class who shall deliver at Commencement the best Orations; "regard being had alike to their elevated and classical character, and to their graceful and effective delivery." These medals, of the values of forty and thirty dollars, for the orations respectively first and second in merit, are awarded, at the close of the exercises, by a committee appointed for the purpose.

2. THE WARNER PRIZE.—*Hon. H. G. Warner, LL.D.*, of Rochester, has founded an Annual Prize, consisting of Silver

Plate of the value of \$50, to be awarded to the "Graduate of Union College Classical course, who shall reach the highest standing in the performance of collegiate duties, and also sustain the best character for moral rectitude and deportment, without regard to religious practice or profession. The prize awarded by the officers of the College, in accordance with the conditions prescribed by the donor, is presented at Commencement.

3 THE INGHAM PRIZE.—*Hon. Albert C. Ingham, LL.D.*, of Meridian, N. Y., for the purpose of promoting a familiarity with the best English classics, has founded an Annual Prize of seventy dollars (in the form of plate, or money, as preferred)¹ to be awarded to that member of the Senior Class (connected with the College for not less than two years), who shall present the best essay on one of two subjects previously assigned in English Literature or History. This Prize is awarded at Commencement by a committee appointed in accordance with certain conditions prescribed by the founder.

4. PRIZE ESSAYS.—Prizes are awarded to the two members of the Senior class who present the best Essays on English Literature, on subjects assigned the previous term.

5. PRIZE SPEAKING.—Prizes are awarded to the two members of the Junior and Sophomore classes, respectively, who deliver the best Orations on the occasion of Prize speaking during Commencement week. Six Juniors and four Sophomores are selected for this exercise; regard being had both to composition and to delivery.

The prizes are in the form of valuable books, and are announced at Commencement.

¹ Provision has been made for the case in which the incumbent may prefer to receive this sum, either in whole, or in part, in medals instead of money.

SPECIAL PRIZE.—The Inaugural Prize, established by the President at his Inauguration, is assigned from year to year under such conditions as may be previously announced.

FINAL MERIT ROLL.—Students are reminded that the relative positions occupied by the names of members of the graduating class on the final merit roll, depend entirely on the standing taken by each respectively at his examination when entering the class, and on his subsequent relative diligence, punctuality, gentlemanlike demeanor and moral conduct.

Degrees are conferred at graduation only upon students of the College who have satisfactorily sustained the examinations for degrees.

Courses of Study.

Courses of Study.

CLASSICAL COURSE.

FRESHMAN CLASS.

FIRST TERM.

Jivy	<i>Lincoln</i>
Xenophon,—Homer.	
Algebra — (continued)—to Series.....	<i>Davies</i>
Greek prose composition.....	<i>Boise</i>
Latin prose composition.....	<i>Allen</i>

SECOND TERM.

Horace.....	<i>Lincoln</i>
Xenophon, Homer, Herodotus.	
Algebra — (completed).....	<i>Davies</i>
Greek prose composition.....	<i>Boise</i>
Latin prose composition.....	<i>Allen</i>

THIRD TERM.

Cicero <i>De Senectute</i> and <i>De Amicitia</i>	<i>Thatcher</i>
Xenophon — Herodotus, Euripides.	
Geometry — Books VI to IX.....	<i>Legendre</i>
Trigonometry.....	<i>Jackson</i>
Rhetoric with Composition and Declamation.....	<i>Day</i>
Greek prose composition.....	<i>Boise</i>
Latin prose composition.....	<i>Allen</i>

(*Physical culture three hours a week and English Composition throughout the year*)

SOPHOMORE CLASS.

FIRST TERM.

Tacitus.	
Euripides, Æschylus.	
History of the United States.	
Rhetoric — Art of Discourse.....	<i>Day</i>
Analytic Geometry.	

SECOND TERM.

Juvenal and Terence.	
Euripides — Æschylus.	
Conic Sections.....	<i>Jackson</i>
Logic.....	<i>Whateley</i>

Courses of Study.

SCIENTIFIC COURSE.

FRESHMAN CLASS.

FIRST TERM.

Latin Grammar and Reader.

French Grammar *Pujol*

Algebra — (continued) — to Series *Bourdon*

History.

SECOND TERM.

Latin Grammar and Reader.

French Grammar and Reader *Pujol*

Algebra (completed)..... *Bourdon*

THIRD TERM.

French Grammar and Reader..... *Pujol*

Geometry — Books VI to IX *Legendre*

Rhetoric with Composition and Declamation..... *Day*

Trigonometry..... *Jackson*

(*Physical culture three hours a week and English Composition throughout the year.*)

SOPHOMORE CLASS.

FIRST TERM.

French Classic Poetry.

German Grammar *Comfort*

Descriptive Geometry.

History of the United States.

Rhetoric — Art of Discourse..... *Day*

Analytic Geometry.

SECOND TERM.

Contemporary French Literature.

German Grammar *Comfort*

Conic Sections *Jackson*

Logic.

Ancient History

Mensuration

Descriptive Geometry

} Eclectic.

THIRD TERM.

Horace — Satires and Epistles.	
Euripides — Sophocles — Plato.	
Statics and Dynamics.....	Jackson
Study of Man	Hopkins
Botany — (voluntary)	Gray
History.	

(Physical culture three hours a week and Composition and Declamation throughout the year.)

JUNIOR CLASS.

FIRST TERM.

Cicero — <i>Tusculan Disputations</i> .	
Sophocles — Æschylus — Thucydides.	
Mechanical Work, Hydrostatics, Hydrodynamics,	
Pneumatics.....	Jackson
Elocution.	
Political Economy	Perry

SECOND TERM.

Lucretius or <i>Quintilian</i> .	
Plato — Demosthenes.	
Elocution.	
Heat, Steam Engine, Electricity, Meteorology	Foster
Physiology.....	Huxley
Ethics.	

THIRD TERM.

Acoustics, Magnetism, Galvanism, Electro Magnetism	Foster
Chemistry	Cooke
History of Civilization.....	Guizot
Zoology	Nicholson
Botany	Gray

(Composition and Declamation and Physical culture three hours a week throughout the year.)

SENIOR CLASS.

FIRST TERM.

Optics, Wave Theory of Light and Radiant Heat.....	Jackson
Mental Philosophy....	Bowen's Hamilton
Lectures on Greek Philosophy	Lewis
Geology	Dana
Plato <i>contra</i> Atheos — (voluntary)	Lewis
Applied Chemistry	Lectures
Chemical Laboratory Exercises.	

SCIENTIFIC COURSE.

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THIRD TERM.

Contemporaneous French Literature.	
German Grammar and Reader	<i>Woodbury</i>
Statics and Dynamics.....	<i>Jackson</i>
Study of Man	<i>Hopkins</i>
Botany (voluntary)	<i>Gray</i>
Analytic Geometry	} Eclectic..... <i>Davies</i>
Surveying	

(*Physical culture three times a week, English Composition and Declamation throughout the year.*)

JUNIOR CLASS.

FIRST TERM.

German Literature.....	<i>Woodbury's Reader</i>
Mechanical Work, Hydrostatics, Hydrodynamics,	
Pneumatics	<i>Jackson</i>
Political Economy.....	<i>Perry</i>
Elocution.	
Drawing.	

SECOND TERM.

German Literature.....	<i>Whitney's Reader</i>
Elocution.	
Heat, Steam Engine, Electricity, Meteorology.....	<i>Foster</i>
Physiology	<i>Huxley</i>
Ethics.	

THIRD TERM.

Acoustics, Magnetism, Galvanism, Electro-Magnetism	<i>Foster</i>
Chemistry	<i>Cooke</i>
Zoology	<i>Nicholson</i>
History of Civilization	<i>Guizot</i>
Botany (voluntary)	<i>Gray</i>

(*Physical culture three times a week and Composition and Declamation throughout the year.*)

SENIOR CLASS.

FIRST TERM.

Optics, Wave Theory of Light and Radiant Heat.....	<i>Jackson</i>
Mental Philosophy	<i>Bowen's Hamilton</i>
Applied Chemistry	<i>Lectures</i>
Chemical Laboratory Exercises.	
Geology.....	<i>Dana</i>

SECOND TERM.

Astronomy	<i>Gummere</i>
Ethics.	
Christian Evidences	<i>Butler's Analogy</i>
Lectures on Greek Philosophy and Poetry	<i>Lewis</i>
Aristophanes — Birds or Clouds (voluntary)	<i>Felton</i>
Hebrew (voluntary).	
English Literature.	
Lectures on the Bible	<i>Lewis</i>
Comparative Philology.	

THIRD TERM.

Christian Ethics	<i>Dr. Mark Hopkins</i>
International Law and Constitution of the United States.	
Lectures on English Poetry	<i>Welch</i>
Lectures on English Literature.	
Lectures on Biblical Literature	<i>Lewis</i>
Lectures on Greek Poetry.	<i>Lewis</i>
Lectures on Art.	
Lectures on History.	
Mineralogy — (voluntary)	<i>Dana</i>
<i>(Physical culture three hours a week and Rhetorical Exercises throughout the year.)</i>	

SECOND TERM.

Astronomy	<i>Gummere</i>
Ethics.	
Christian Evidences.....	<i>Butler's Analogy</i>
Lectures on English Literature.	
Lectures on the Bible.	
Physical Laboratory Exercises.	

THIRD TERM.

Christian Ethics	<i>Dr. Mark Hopkins</i>
International Law, and Constitution of the United States.	
Lectures on English Poetry	<i>Welch</i>
Lectures on Biblical Literature.....	<i>Lewis</i>
Higher Surveying and Engineering Statics — (voluntary) ...	<i>Gillespie</i>
Mineralogy (voluntary).	
Lectures on Art.	
Lectures on English Literature.	
Lectures on History.	

(*Physical culture three hours a week and Rhetorical Exercises throughout the year.*)

Catalogue of Students.

ABBREVIATIONS.

c — Classical Students.

s — Scientific Students.

e — Students of Civil Engineering.

The second list consists of such as have been members of the several classes at some time preceding the beginning of the present College year.

SENIOR CLASS.

<i>s</i> SPENCER MADISON ADSIT,	<i>Vischer's Ferry.</i>
<i>c</i> CLARENCE ELLIS AKIN,	<i>Johnsonville.</i>
<i>c</i> GEORGE WASHINGTON ALBRIGHT,	<i>Albany.</i>
<i>e</i> EDWIN CRAWFORD BAIRD,	<i>Dayton, O.</i>
<i>c</i> FREDERICK JAMES BASSETT,	<i>Albany.</i>
<i>e</i> FRANK V. BROWNELL,	<i>Schenectady.</i>
<i>e</i> JOHN CAUSLEY,	<i>Schenectady.</i>
<i>c</i> HORACE THOMAS CHADSEY,	<i>Schenectady.</i>
<i>e</i> FRANCIS HORTON COLCOCK,	<i>Beaufort, S. C.</i>
<i>e</i> GEORGE EDMUND CRAIN,	<i>Milwaukee, Wis.</i>
<i>e</i> ADELBERT EUGENE CUMMING,	<i>Ohio.</i>
<i>c</i> JOHN AUGUSTINE DELEHANTY,	<i>Albany.</i>
<i>s</i> FRANK ADAMS DE PUY,	<i>New York.</i>
<i>e</i> WILLIAM J. DE TREVILLE,	<i>Orangeburg, S. C.</i>
<i>c</i> GEORGE FAIRLEE,	<i>Schenectady.</i>
<i>s</i> JOHN FISHER,	<i>Columbia, S. C.</i>
<i>e</i> JOHN TOWNSEND HART,	<i>Charleston, S. C.</i>
<i>e</i> OLIVER JAMES HART,	<i>Charleston, S. C.</i>
<i>c</i> LUCIUS EVERETT HAWLEY,	<i>Potsdam.</i>
<i>s</i> WILLIAM ASAPH HOLMAN,	<i>Glen's Falls.</i>
<i>c</i> JOHN BREWSTER HUBBS,	<i>Jonesville.</i>

e PAUL TRIPP JENKINS,.....	<i>Charleston, S. C.</i>
c ROBERT JOHNSTON,	<i>Cohoes.</i>
c EUGENE JERALEMON,.....	<i>Arcola, N. J.</i>
c JAMES HENRY LA ROCHE,.....	<i>Laurel Hill, S. C.</i>
c DEWITT CLINTON MOORE,.....	<i>Johnstown.</i>
s JOHN C. PENNIE,.....	<i>Albany.</i>
c SAMUEL PRIOLEAU,.....	<i>Charleston, S. C.</i>
c JAMES PETER RACE,.....	<i>Andes.</i>
c WILLIAM BIRCH RANKINE,.....	<i>Geneva.</i>
s WILLIAM CLEVELAND ROBERSON,.....	<i>New York.</i>
e OSCAR H. ROGERS,.....	<i>Green Island.</i>
c JOSEPH COUNTICE RUSSUM,.....	<i>Centreville, Md.</i>
s JAMES IRA TAYLOR,	<i>Cohoes.</i>
c JOHN GALEN VAN NESS,.....	<i>Osborne's Bridge.</i>
c JOHN BOHLEN WASHBURN,	<i>Ashland, Pa.</i>
s BARTLETT WHITLOCK,.....	<i>Brooklyn.</i>

WILLIAM BEARD,.....	<i>Williamsport, Pa.</i>
FREDERICK A. BELKNAP,.....	<i>Erie, Pa.</i>
PETER FREDERICK BELLINGER,.....	<i>Herkimer.</i>
WILLIAM ARTHUR ALEXANDER BROWN,..	<i>Flatbush.</i>
FRANCIS BURROWS,	<i>Schenectady.</i>
ROBERT SAMUEL CRUTTENDEN,	<i>East River, Conn.</i>
ABRAHAM B. DEBOIS,.....	<i>New Paltz.</i>
WILLIAM COMSTOCK DUELL,	<i>Schenectady.</i>
FRANKLIN HENRY GIDDINGS,	<i>Housatonic, Mass.</i>
WALTER GLADSTONE,.....	<i>Andes.</i>
THERON LEWIS HILES,.....	<i>Chicago, Ill.</i>
FRANKLIN HORATIO HOUGH,.....	<i>Lowville.</i>
CHARLES ADDISON HOWE,	<i>Shingle Creek.</i>
JOHN RANDOLPH LUNSFORD,.....	<i>Charleston, S. C.</i>
CASPAR LE ROY ODELL,.....	<i>Schenectady.</i>
JOHN CHRISTIAN ROTH,.....	<i>Albany.</i>
GEORGE AMBROSE SANFORD,.....	<i>Tariffville, Conn.</i>
BENJAMIN FREDENBURGH SPRAKER,.....	<i>Canajoharie.</i>
DERRICK WESSELS TEN BROECK,.....	<i>Rhinebeck.</i>

JUNIOR CLASS.

s	ELIPHALET NOTT ANABLE,...	Long Island City.
	GEORGE CURTISS BENDER,	Albany.
s	FREDERICK BIDLEMAN,	Little Falls.
e	JOHN E. BOLD,	Charleston, S. C.
s	WILLIAM WARD BRITTON,	Brooklyn.
c	LEWIS CASS,	Albany.
s	CHARLES MORTIMER CULVER,	Rensselaerville.
s	HUGH H. DEY ERMAND,	Albany.
c	ALEXANDER DUANE,	Portland, Me
e	EDWARD HAYWARD,	Cohoes.
s	WILLIAM EVERETT JOHNSON,	Schenectady.
s	EGBERT PEEK LANSING,	Cohoes.
c	WILLIAM FREDERIC LANSING,	Little Falls.
c	WILLIAM DENSMORE MAXON,	Schenectady.
c	ARTHUR BANNARD MOORHOUSE,	Schenectady.
c	AARON MYNDERSE,	Schenectady.
e	JOHN JOSEPH O'HARA,	Albany.
c	ROBERT GOURDIN O'NEALE,	Charleston, S. C.
c	LEONARD PAIGE,	Albany.
s	SAMUEL BARCLAY ROGERS,	Fishkill.
c	CHARLES P. SANDERS, JR.,	Scotia.
c	JAMES COSLETT SMITH, JR.,	Canandaigua.
c	VASA EDWIN STOLBRAND,	Columbia, S. C.
c	FRANK HOTCHKISS STREETER,	Glen's Falls.
s	JOHN FRANKLIN THOMAS,	Stuyvesant.
s	WILLIAM HENRY THOMAS,	Stuyvesant.
c	LAUREN VANDERVEER,	Schenectady.
s	SEYMOUR VAN SANTVOORD,	Kinderhook.
c	WENTWORTH DANIEL VEDDER,	Schenectady.
s	FLETCHER VOSBURGH,	Albany.
c	ADRIAN VAN SANTVOORD WALLACE,	Little Britain.
s	WALTER WELLS,	Johnstown.

EDWARD EARLE BRITTON,	<i>Brooklyn.</i>
WALTON J. CARPENTER,.....	<i>Quaker Street.</i>
JARVIS LIVERMORE CARTER,	<i>Paris, Me.</i>
LEE WHITNEY CASE,	<i>Schenectady.</i>
CHARLTON KIRBY DAVIS,	<i>New York.</i>
EDMUND FROST FISH,.....	<i>Fultonville.</i>
PIÉRRÉ CLUTE HOAG,.....	<i>Schenectady.</i>
FREDERIC SAMUEL JOHNSON,.....	<i>Oswego.</i>
FRANCISCO RODRIGUEZ JORDAO,	<i>Limeria, Brazil, S. A.</i>
HARVEY LYON,....	<i>Schenectady.</i>
CHARLES AMASA MARKS,.....	<i>Riverside, Conn.</i>
THOMAS MCCREDIE, JR.,	<i>Albany.</i>
JOHN MCMAHON,	<i>Saratoga Springs.</i>
DAVID BENSON PAGE,.....	<i>Oswego.</i>
WARREN SYLVANUS PURINGTON,.....	<i>Preston Hollow.</i>
FRANCIS V. RIDER,	<i>Chatham.</i>
MAUS SLINGERLAND, JR.,.....	<i>Clarkesville.</i>
EVERETT SMITH,	<i>Schenectady.</i>
WILLIAM CRESSY VROOMAN,.....	<i>Schenectady.</i>
JOHN FINLAY WAKEMAN,	<i>Ballston Spa.</i>

SOPHOMORE CLASS.

s	WILLIAM PLATT ADAMS,.....	<i>Rhinebeck.</i>
s	LOUIS CROCKER BEATTIE,.....	<i>Schenectady.</i>
c	LEE WILLIAM BEATTIE,.....	<i>Cornwall.</i>
c	CHARLES HODGE BLAIN,.....	<i>Amsterdam.</i>
s	FREDERIC SELDEN BLOSS,.....	<i>Troy.</i>
e	WAYLES BAKER BRADLEY,....	<i>Marietta, Ga.</i>
c	ANDREW ALFRED BROWNE,.....	<i>St. Gabriel, La.</i>
c	OCTAVE GEDEON BROWNE,.....	<i>St. Gabriel, La.</i>
s	EDWARDS BICKWELL BURNAP,.....	<i>Canajoharie.</i>
e	WILLIAM WALLACE CHILDS,.....	<i>Charleston, S. C.</i>
c	FREDERIC FRASER CHISOLM,.....	<i>Coosaw, S. C.</i>
s	JOHN BARKLEY CONWAY,.....	<i>Argyle.</i>
s	WILLIAM WALTON CRAIG,.....	<i>Schenectady.</i>
e	LOUIS JACKSON DAVIDS,.....	<i>New Rochelle.</i>
c	ALONZO CLARENCE DINGMAN,.....	<i>Minden.</i>
e	DAVID FRANKLIN GLOVER,.....	<i>South Haven.</i>
s	JAMES ALPHEUS GOODRICH,....	<i>Schenectady.</i>
	JOHN FRANKLIN GREENE,.....	<i>Jonesville.</i>
s	GEORGE STEWART GREGORY,.....	<i>Poughkeepsie.</i>
s	JOHN WILLIAM HENRY GRUPE,.....	<i>Schenectady.</i>
c	WILLIAM HAYES,.....	<i>Albany.</i>
c	JAMES HEATLY,.....	<i>Schenectady.</i>
s	LYMAN SANFORD HOLMES,.....	<i>Cobleskill.</i>
c	EDWARD CLARK HOYT,.....	<i>Schenectady.</i>
e	GEORGE EDWIN MARKS,.....	<i>New York.</i>
s	EDWARD McDONNELL,.....	<i>Amsterdam.</i>
s	JAY E. MCGUIRE,.....	<i>Boyleston.</i>
c	JOHN EDWIN MULLER,.....	<i>Columbia, S. C.</i>
c	FRANK HENRY NICHOLS,.....	<i>West Pittstown, Pa.</i>
	JOHN DAVIS PARSONS,.....	<i>Albany.</i>
s	JAMES LAMB PERRY,.....	<i>Charleston, S. C.</i>
e	JACOB BRILL PETERS,.....	<i>Green Haven.</i>
c	NEWTON LUTHER REED,.....	<i>Huron.</i>
c	ROBERT MEANS RHETT,.....	<i>Beaufort, S. C.</i>
c	ARTHUR JOSEPH RODGERS,.....	<i>Brooklyn.</i>
c	WILLIAM BENJAMIN ROPER,.....	<i>Charleston, S. C.</i>

c JULIAN ALEXANDER SALLEY,	<i>Orangeburg, S. C.</i>
s HENRY SCHLOSSER,	<i>Schenectady.</i>
c FRANK LOUIS SNOOK,	<i>Monticello.</i>
c DAVID SPRAGUE,	<i>Schenectady.</i>
s CHARLES STANFORD, JR.,	<i>Schenectady.</i>
s CHARLES H. VAN AUKEN,	<i>Cohoes.</i>
c FREDERICK VAN DUSEN,	<i>Queensbury.</i>
c JOHN NICHOLAS VAN PATTEN,	<i>Schenectady.</i>
s WILLIAM AUGUSTUS WALDRON,	<i>Cohoes.</i>
s JAMES GILBERT WEEDEN,	<i>Greenfield Centre.</i>
s EDWARD PAYSON WHITE,	<i>Amsterdam.</i>

JOHN VAN ARNUM CLUTE,	<i>Guilderland.</i>
FRANCIS OLIVER CORNELL,	<i>Glenville.</i>
CHARLES GILMAN DAVIS,	<i>Schenectady.</i>
WILLIAM FOURNIER,	<i>Schenectady.</i>
HENRY G. FRENCH	<i>Elizabethtown.</i>
FRANK WENTWORTH GILLESPIE,	<i>Schenectady.</i>
CLARK COCHRANE HEATH,	<i>Amsterdam.</i>
EDWARD LOUISA HUTCHINSON,	<i>Summerville, S. C.</i>
DAVID JAMES,	<i>Albany.</i>
HERBERT W. KINGSLEY,	<i>Schenectady.</i>
SETH EDGAR LASHER,	<i>Bethlehem.</i>
DAVID BENJAMIN LYON,	<i>Schenectady.</i>
JOHN MCBRIDE,	<i>Hamptonburg.</i>
SAMUEL MOORE MCGAFFIN,	<i>Cohoes.</i>
FRANK ELISHA MORS,	<i>West Troy.</i>
FRANK HENRY OSBORN,	<i>Tonganoxie, Kan.</i>
ASHLEY POND,	<i>Elizabethtown.</i>
WALTER SANFORD,	<i>Albany.</i>
WILLIAM HASKELL SIMONS,	<i>Cooper River, S. C.</i>
GERARDUS SMITH,	<i>Schenectady.</i>
EDWARD TANNER,	<i>Boyleston.</i>
LEGRAND CANNON TIBBITS,	<i>Hoosac.</i>
EDWARD TRAINER,	<i>Williamsport, Pa.</i>
CHARLES WILLIAM VEDDER,	<i>Niskayuna.</i>
THOMAS WATIES,	<i>Columbia, S. C.</i>
WILLIAM MAXWELL WHITE,	<i>Amsterdam.</i>
WILLIAM HENRY TAYLOR WINNE,	<i>Albany.</i>

FRESHMAN CLASS.

c	ROBERT CARTER ALEXANDER,.....	<i>West Charlton,</i>
c	RICHARD DINZEY ANABLE,.....	<i>North Adams, Mass.</i>
s	FREDERICK AUGUST BALLART,.....	<i>Syracuse.</i>
c	JAMES EVERARD BENEDICT,.....	<i>South Norwalk, Ct.</i>
s	WILLIAM EVARTS BENJAMIN,	<i>Schenectady.</i>
c	CHARLES FRANCIS BISHOP,.....	<i>Stanfordville.</i>
c	WILLIAM BRONK,.....	<i>New Baltimore.</i>
e	HORACE JOSHUA CAMPBELL,.....	<i>Greensborough, Vt.</i>
c	PATRICK HENRY CAIN,	<i>Schenectady.</i>
c	JOSEPH DAVIS CRAIG,.....	<i>Albany.</i>
c	FRANK PHILO SANFORD CRANE,.....	<i>Middletown.</i>
s	FRANK SHERWOOD DAVENPORT,.....	<i>Davenport.</i>
c	GEORGE EDWARD DIXON,	<i>Cohoes.</i>
s	ANDREW HENRY DOUGHERTY,.....	<i>Parkville, Mich.</i>
	FRANK SELDEN ELY,.....	<i>Luzerne.</i>
e	JOHN LELAND FITZGERALD,.....	<i>Brunswick, Ga.</i>
c	EDWARD MILES GADSDEN,	<i>Charleston, S. C.</i>
c	WILLIAM JAMES GIBSON,	<i>West Charlton.</i>
e	ELI SANFORD GODFREY,	<i>Easton, Conn.</i>
c	DANIEL PATRICK HALPEN,.....	<i>Albany.</i>
s	HERBERT DURAND HOBBS,.....	<i>Malone.</i>
c	JOHN ICKLER,.....	<i>St. Paul, Minn.</i>
c	WILLIAM HEENIN INGRAM,	<i>Manning, S. C.</i>
c	JOHN ANDREW KEMP,	<i>Meredith.</i>
c	ROBERT JUDSON LANDON,.....	<i>Schenectady.</i>
s	WILLIAM BARKER LANDRETH,....	<i>Scottsburgh.</i>
c	CLAUDE LASCELLES LEGGE,.....	<i>Spartanburg, S. C.</i>
c	RICHARD TIMOTHY LOMASNEY,.....	<i>Schenectady.</i>
c	ROBERT TRAILL SPENCE LOWELL, JR., ...	<i>Schenectady.</i>
c	WARD MCALLISTER, JR.,.....	<i>New York.</i>
c	WILLIAM THEODORE MCCORKLE,.....	<i>Williamston, S.C.</i>
c	JAMES MACFIE MCMASTER,.....	<i>Columbia, S. C.</i>
s	DAVID MUHLFELDER,.....	<i>Ballston Spa.</i>
e	EDWARD BAILEY NOBLE,.....	<i>Albany.</i>

	JOHN ELLIOTT PARRY,.....	<i>Sandy Hill.</i>
c	ISAAC CHERIGNY PORCHER,.....	<i>Pinopolis, S. C.</i>
	WALTER PEYRE PORCHER,.....	<i>Charleston, S. C.</i>
c	JOHN VAN SCHAIK LANSING PRUYN, JR.,	<i>Albany.</i>
c	WILLIAM DECHUSTIGNEY RAVENEL,	<i>Charleston, S. C.</i>
c	BENJAMIN HENRY RIPTON,.....	<i>Johnstown.</i>
s	FRED. T. ROGERS,	<i>Westerly, R. I.</i>
	PHILIP JOSEPH RYAN,.....	<i>Albany.</i>
e	WILLIAM HENRY SADLER,	<i>Sandy Creek.</i>
c	GEORGE HENRY SLINGERLAND,.....	<i>Augusta, Ill.</i>
e	HARRINGTON MANNING SMITH,.....	<i>Dayton, O.</i>
e	JOHN JAMES STOTT,.....	<i>Argyle.</i>
c	HENRY TAZEWEILL THOMPSON,...	<i>Columbia, S. C.</i>
c	TALCOTT CAMP VAN SANTVOORD,.....	<i>New York.</i>
c	EDGAR LAVERNE VINCENT,.....	<i>Persia.</i>
s	MILES W. VOSBURGH,.....	<i>Albany.</i>
c	DELANCEY WALTON WATKINS,	<i>Schenectady.</i>
c	EDWARD WALTON WATKINS,.....	<i>Schenectady.</i>

	JAMES ALEXANDER HAMILTON,.....	<i>Orangeburg, S. C.</i>
	JAMES STEWART,	<i>Johnstown.</i>
	JAMES SWEENEY.....	<i>Schenectady.</i>

SUMMARY.

[illegible]

Prizes.

Nott Prize Scholarships.

Class of 1878.

ALEXANDER DUANE, Portland, Me.

Class of 1879.

DAVID SPRAGUE, Schenectady.

EDWARD PAYSON WHITE, Amsterdam.

Prizes awarded at Commencement.

June 28, 1876.

Ingham Prize.

JAMES REAGLES TRUAX, Schenectady

Warner Prize.

JOSEPH REUBEN DAVIS, Pike, Penn.

President's Prizes.

1st — JAMES REAGLES TRUAX, Schenectady.

2d — HOMER GREENE, Ariel, Penn.

Blatchford Prizes.

1st Medal — HOMER GREENE, Ariel Penn.

2d Medal — JOHN WHITEFIELD DOREMUS, Knoxville, Tenn.

Prize Essays in English Literature.

1st — HOMER GREENE, Ariel, Penn.

2d — JOHN WHITEFIELD DOREMUS, Knoxville, Tenn.

President's Fellowship.

FERDINAND JULIUS BALLART, Syracuse.

Prize Speakers.

June 27, 1876.

JUNIORS.

1st Prize — DEWITT CLINTON MOORE, Johnstown.

2d Prize — JOHN AUGUSTINE DELAHANTY, Albany.

SOPHOMORES.

1st Prize — WILLIAM DENSMORE MAXON, Schenectady.

2d Prize — LEONARD PAIGE, Albany.

Lowell Latin Prize.

ALEXANDER DUANE, Portland, Me.

Historical Prizes.

1st — HOMER GREENE, Ariel, Penn.

2d — JOHN WHITEFIELD DOREMUS, Knoxville, Tenn.

3d — JOHN ELIOT WOODBRIDGE, New Brunswick, N. J.

School of Civil Engineering.

Faculty.

Rev. ELIPHALET NOTT POTTER, D.D.,
President.

ISAAC W. JACKSON, LL.D.,
Professor of Mathematics.

JOHN FOSTER, LL.D.,
Professor of Natural Philosophy.

JONATHAN PEARSON, A.M.,
Professor of Botany.

WILLIAM WELLS, LL.D.,
Professor of Modern Languages and Literature.

MAURICE PERKINS, A.M., M.D.,
Professor of Chemistry.

REV. GEORGE ALEXANDER, A.M.,
Assistant Professor of Logic, Rhetoric, and Mental Philosophy.

CADY STALEY, C.E.,
Professor of Civil Engineering.

HARRISON EDWIN WEBSTER, A.M.,
Professor of Natural History.

CAPT. THOMAS WARD, U.S.A.,
Professor of Military Tactics.

ISAIAH B. PRICE, C.E.,
Professor of Physics.

CHARLES JONES COLCOCK, C.E.,
Tutor in Mathematics.

EDGAR MARSHALL JENKINS,
Registrar.

School of Civil Engineering.

UNION COLLEGE.

Information.

This department was founded in 1845. Its object is to give its students such instruction in the theory and practice of Civil Engineering, as to qualify them for immediate usefulness in the field and office in a subordinate capacity, and at the same time to fit them to fill satisfactorily the higher positions in the profession, after a moderate amount of experience in the routine of practice. The course of instruction aims to effect this by constant exercise in mechanical draughting, instrumental field work and numerical calculation, combined with the study of text-books, and lectures on the numerous subjects where books are wanting.

The connection of the Engineering School with the College affords its students peculiar advantages for special study in the various departments of the College, to all of which the engineering students are admitted without extra charge.

The location of Schenectady is most favorable for an Engineering School. The city is on the Mohawk river and is intersected by several rail roads and the Erie canal. These necessitate many bridges and other works of interest to the Engineering student. There are also extensive Locomotive Works, Machine Shops and Foundries; all of which afford special advantages for examination and study.

REQUIREMENTS FOR ADMISSION.

Candidates for admission must present testimonials of good moral character, and must be at least sixteen years of age.

Examinations for admission take place in presence of three College officers.

The stated times for such examinations will be found in the Calendar. By observing and conforming to these appointed times, applicants will greatly promote their own convenience and interest, as well as those of the examiners.

Candidates for the Freshman class will be examined in English Grammar, Modern Geography, Arithmetic, Algebra to Equations of the second degree, and Plane Geometry, five books.

Candidates for any other class will also be examined in all the studies previously pursued by that class, as shown in the course of studies.

Students from other colleges, in addition to passing a satisfactory examination, will be required to present a letter of honorable dismissal.

Students may enter at any point of the course for which they are prepared.

Any studies of the course may be taken separately by those qualified to pursue them profitably.

EXPENSES.

The College bills must be paid at the beginning of each term. In case such payment is not made within the first week of the term, the Treasurer is instructed to inform the parent or guardian of the delinquent.

Students, unless from another College, pay for entrance into the Freshman class, \$5; into the Sophomore class, \$7; into the Junior class, \$9; into the Senior class, \$12.

No retrospective expense is incurred by entering in advance.

The College bills for Tuition, etc., are \$40 per term.

The extra charge for the Engineering students in the Laboratory comprises only the cost of materials used and apparatus broken, varying from \$3.00 to \$6.00 per term.

The price of board in the Clubs varies from \$3.00 to \$4.00 per week, and in private families from \$3.00 to 5.00.

The expenses of instruction, board, lights, washing, text-books, etc., during the three terms of thirty-nine weeks, may vary in amount from \$250 to \$350.

TERMS AND VACATIONS.

The course of study is completed in four years. In each year there are three Terms of the average length of thirteen weeks. Commencement takes place on the fourth Wednesday in June, and the First Term begins twelve weeks after that time. This term is followed by a Vacation of nearly two weeks embracing the Christmas holidays, and there is also a brief recess at Easter. The Second Term consists of twelve weeks. The Third Term ends with Commencement.

DEGREE.

At the beginning of the last term of the course, students who are candidates for a diploma are required to undergo a written examination on the leading points of all their preceding studies. Those who pass it satisfactorily (and complete similarly the remainder of the course), receive a diploma conferring the degree of "Civil Engineer" (C. E.), and it is intended that this diploma shall be a guaranty of more than average ability and industry. The others receive certificates proportioned to what they have done, both as to quantity and quality.

SPECIAL STUDENTS.

Those who are not candidates for a degree, but desire to study Surveying, Road Engineering or any other special branches of the course, can enter as Special students, and take such studies as they require.

ARCHITECTURAL STUDENTS will find a large part of the course (particularly the Draughting, Mensuration, Stereotomy, Strength and Stability, etc.), adapted to their requirements.

Departments of Instruction.

MATHEMATICS.

The studies of this department include the following : Algebra, beginning at equations of the second degree ; Geometry, beginning at the sixth book of Davies's Legendre ; Trigonometry plane and spherical ; Conic Sections ; Analytical Geometry ; Descriptive Geometry ; Differential and Integral Calculus.

NATURAL PHILOSOPHY.

The instruction in this department commences with the third term of the Sophomore year and extends through two years.

To secure at once precision and fullness, the instruction is mainly given from recently prepared text books. Frequent lectures are, however, delivered either to furnish illustration and proofs of principles by experiment, or to amplify particular subjects. Thus, after the completion of Statics and Dynamics, several lectures are devoted to mechanical "work," in order that not only the construction and theory, but modes of determining the *efficiency* of the various hydraulic and pneumatic machines may be understood. All lectures are required to be written out by the students in full from the notes, and submitted for inspection. Numerous problems are also given on all the subjects, and are mostly so constructed that the calculated results may be verified by experiments before the class. To test

the accuracy of the knowledge gained, and to ensure its ready command, several written examinations are required in each term.

In most of the branches included in this department the apparatus is sufficient for very complete experimental illustrations, and through the liberality of friends of the College, important additions of French, English and American instruments have been made within the present year.

The following are the subjects included in the course ; statics, dynamics, hydrostatics, hydrodynamics, pneumatics, optics, acoustics, heat, electricity, magnetism and galvanism.

ASTRONOMY.

The instruction in Astronomy includes Spherical Astronomy, Theory of Astronomical Instruments, and Physical Astronomy.

The students are also given a practical course in Astronomical surveying and location, comprising the determination of time, latitude and longitude, and the location of meridians, parallels, great circles and rhumb lines.

NATURAL HISTORY.

PHYSIOLOGY is taught in the second Junior term to the whole class by recitations and by lectures on Comparative Anatomy and Physiology. The subjects are illustrated by preparations and dissections.

ZOOLOGY is taught in the third Junior term, by recitations and lectures. The work is illustrated by constant exhibition of specimens and dissections in the class room.

Instruction in Geology is given during the first term of the Senior year, in a series of recitations and lectures from 60 to 70 in number.

LITHOLOGICAL GEOLOGY. The attention of the student is first directed to a carefully identified series of specimens, and the methods and tests used in identification are given. Then unnamed specimens are given him, the nature and constitution of which he is expected to determine by comparison and by application of the proper tests.

PALEONTOLOGY. By the examination on the part of the student of fossils, especially characteristic of the principal formations, and by lectures the attempt is made to familiarize the mind with the more important forms of extinct animal and vegetable life. The conditions favorable and unfavorable to the preservation of such forms in the rocks, are also considered. Facilities for special study of Paleontology are placed at the disposal of the student without extra charge.

HISTORICAL GEOLOGY, including the different conditions under which the rock masses occur, the order of the succession of the formations in time, etc.

DYNAMICAL GEOLOGY. The nature and origin of coal, peat, coral reefs, salt; the action of water in erosion, transportation, etc.; of frozen water, glaciers, icebergs; the various theories of volcanic action; earthquakes and the origin of mountains; metamorphisms; veins, etc.

MINERALOGY is taught during the second Senior term by a course of practical lessons, illustrated by a complete set of models of crystals and a series of six hundred specimens for determination by crystallographic and blow-pipe examination.

BOTANY is taught during the Summer term, both from textbook (Gray's) and practically in the field.

CHEMISTRY, MINERALOGY, AND METALLURGY.

The recitations in Chemistry extend through two terms. In addition to this, the students receive Laboratory instruc-

tion. They are taught by means of qualitative Analysis and exercise in the use of the blow pipe, to determine the constitution of the useful minerals. Their knowledge of these minerals is increased by a course in determinative mineralogy in which use is made of the celebrated Wheatley Collection, and a complete set of crystal models. As far as practicable the operations of industrial chemistry are carried out. Students are taught to tin zinc, and gild iron; to electro plate with gold, silver, copper and nickel; to form the various Sulpho compounds from pyrites; to burn plaster, lime and cements and to analyze and test their efficacy: to make and examine the most important alloys; to estimate clays for buildings and fire brick and for the manufacture of porcelain: to analyze fuels, slags and fluxes.

The student is required to go through with a thorough course in assaying, treating ores of lead, silver, copper, mercury and gold. Attached to the laboratory is a library of Technological books always open to the students for reference.

Detached from the Laboratory is a photographic room with skylight, printing room, etc., and instruction is given by a practical photographer.

MODERN LANGUAGES.

The modern Languages supply the linguistic training of this course, and are regular daily studies during the Freshman, Sophomore and Junior years; one hour per day being given to each class, and the studies alternating according to the schedule.

Instruction is imparted by exercises in translation (written and oral), conversational practice, and familiar lectures on the standard authors read.

The French Language is a regular study through six terms, beginning with the first term Freshman. The text book mainly

used is Pujol's *Complete French Course*. At a later period the *French Dramatists*, Racine and Corneille, are read.

The German Language extends through six terms, commencing the first term Sophomore. The text books are Comfort's *Grammar*, and *Course of Literature*, Whitney's *Grammar*, Woodbury's *Reader*, and the Poets *Schiller* and *Goethe*.

In order to familiarize the student with reading French and German scientific works, part of the text books of the course are in those languages.

LOGIC, RHETORIC, AND ENGLISH LITERATURE.

The instruction in Logic and Rhetoric, includes the use of text books, lectures, and practical exercises in declamation and the various forms of composition. In the study of English Literature, it is the aim to secure an acquaintance with the historical development of the language, and the course of English thought as expressed at different periods, in the works of representative men.

The Freshmen have frequent exercises in declamation and the elementary forms of composition, and during the first term of the Sophomore year they study a text book on Rhetoric. The subject is carried still further in the Junior year in connection with Logic. During the Junior and Senior years the rhetorical exercises consist of essays, discussions and declamation; and the Classics of English Literature and its history, are made the subjects of lectures and of study.

Special attention is paid to writing descriptions of Engineering structures and to making reports upon Engineering projects.

DRAWING AND DESCRIPTIVE GEOMETRY.

The instruction in this department extends through three years.

In the last term of the Freshman year the student is instructed in the use of drawing instruments and the construction of Geometrical problems: in the first term of the Sophomore year, Descriptive Geometry (orthographical projection). The drawings of intersections, developments, etc., are from Schroeder's models, the Paris Polytechnic School models of intersections and the Olivier models.

In the second term, Spherical Projections; One Plane Descriptive Geometry with drawings from models of Vauban's system of Fortifications; and the application of Descriptive Geometry to Stone Cutting, with drawings from the stereotomy models of the Paris Polytechnic school; Shades and Shadows. .

In the third term, conventional colors, freehand drawing and drawing in plan, elevation and section. The drawings are made from models and from engineering structures.

In the first term of the Junior year, Machine Drawing: in the second term, oblique projections, including mechanical, military and isometrical projections: in the third term, topographical drawing, comprising methods of representing the relief of ground by contour lines, hatchings and shades from vertical and oblique light: Bardin's models of the various forms of ground are used to illustrate the subject: in the first term of the Senior year, Natural Perspective: in the second term, Architectural Drawing.

ENGINEERING.

The subjects of the course are so arranged as to harmonize

them with the seasons of the year suitable to field work or otherwise. The course includes the following subjects :

SURVEYING : Land Surveying with chain alone, chain and compass, transit, theodolite, plane-table and solar compass ; Mining Surveying ; Hydrographical Surveying ; Topographical Surveying ; Geodetic Surveying ; and Astronomical Surveying and location.

LEVELING with the plumb-line level, water level and spirit level ; Angular Leveling ; and Barometric Leveling.

MENSURATION of engineering structures.

ROAD ENGINEERING : comprising the reconnaissance, location and construction of common roads and rail roads ; the improvement of the surface of common roads, graveling, McAdamizing, paving, planking, etc. ; the construction of rail roads, including earthwork, mechanical structures, superstructure and equipment.

ENGINEERING STATICS : Statical Forces, weights of bodies, fluid pressure, semi-fluids, heat, cold, animal force, etc. ; Dynamical Forces, solids in motion, impact, pile driving, waves, wind, etc.

STRENGTH OF MATERIALS : data and formulas for calculating the resistance of materials to extension, compression, torsion, bending and breaking.

STABILITY OF STRUCTURES : data and formulas for calculating the resistance of frames, roofs, bridges, retaining walls, arches, etc , to giving way by dislocation, overturning, sliding, etc.

GENERAL CONSTRUCTION : Materials, foundations, masonry, carpentry, etc.

BRIDGE ENGINEERING : Plans and calculations of the forms and dimensions of bridges of wood, iron and stone. A working model of a bridge, in which the strains at various points

are shown by a Dynamometer, illustrates the identity of the results of theory and experiment.

WATER ENGINEERING: Hydraulic formulas, the supply of water for towns and for irrigation, the removal of water by drainage and sewerage, canals, the improvement of river navigation, harbors, sea coasts, etc.

Agricultural Engineering.

Sanitary Engineering.

FIELD WORK.

The instruction is made as practical as possible. The students have constant practice in the field whenever the weather will permit. The field work consists in Land Surveying with the compass and chain, etc. Triangular and Trilinear Surveying, and the use of the transit, solar compass and plane table; Common, Trigonometric and Barometric Leveling, and the use of the spirit level, water level, theodolite and barometer; Road Engineering, comprising the reconnaissance and location of a line of road, leveling the line, running curves, staking out side slopes and foundation pits, etc. The corps for road engineering is regularly formed, and each student takes in turn the position of flagman, chairman, rodman, leveler and transitman; Astronomical Surveying and Location, and the use of the sextant.

VOLUNTARY STUDIES.

Any of the studies of the Classical and Scientific Courses of the College can be taken by the Engineering students without extra charge. Many avail themselves of this opportunity for special study in Ancient Languages, Natural History, Mental and Moral Science, Rhetoric, Logic, etc.

For general College Catalogue, and information concerning the Classical and Scientific courses, address E. M. Jenkins, Registrar.

INSTRUMENTS AND APPARATUS.

This department is fully supplied with field instruments of the best description, comprising Transit, Surveyors' Compass, Prismatic Compass, Burneir's Compass, Solar Compass, Y Levels, the Levels of Troughton, Egault, Lenoir and Burneir; Plane Table, Sextant, Octant, Mountain Barometers, Aneroid Barometer and a Chronometer.

The extensive private collection of models and instruments, belonging to the late Professor Gillespie, has been purchased for the department, making the entire collection the most complete in the country.

The collection of models in Descriptive Geometry and Stereotomy is very complete. The following are some of the most important :

THE OLIVIER COLLECTION: This consists of about fifty models, representing the most important and complicated ruled-surfaces of descriptive geometry, particularly warped or twisted surfaces. Their directrices are represented by brass bars, straight or curved, to which are attached silk threads representing the elements, or successive positions of the generatrices of the surfaces. Each of these threads has a weight suspended by it so as always to make it a straight line. These weights are contained in boxes sustaining the directrices and their standards. The bars are movable in various directions, carrying with them the threads still stretched straight by the weights in every position they may take; so that the forms and natures of the surfaces which they constitute are continually changing, while they always remain ruled-surfaces. In this way a plane is transformed into a paraboloid, a cylinder into a hyperboloid, etc.

These models were invented by the lamented Theodore Olivier, while professor of descriptive geometry at the *Conser-*

vatoire des Arts et Metiers, in Paris. One set of them is now deposited there, and a second is in the Conservatory of Madrid. Copies of some of them are to be found in most of the polytechnic schools of Germany. The Union College set is the original collection of the inventor, having been made in part by his own hands, and after his death in 1853, retained by his widow till bought from her by Professor Gillespie, in 1855. It is more complete than that in the Paris *Conservatoire*. It may be worth noticing that the silvered plates on the boxes reading, "*Inventé par Theodore Olivier*," etc., were added by Madame Olivier, after the purchase, at her own expense, as a tribute to the memory of her husband; her own words being, "*Je tenais à ce que chaque instrument portât le nom du savant dont la réputation passera à la postérité.*"

Among the most remarkable peculiarities of these models is their experimental demonstration of various important theorems of Higher Geometry; as also their suggestion of greatly enlarged views of the near relationship of seemingly dissimilar geometrical forms, if not their essential identity; since the movements which the various parts admit, cause one surface gradually to pass into another as in a dissolving view; so that, for example, a plane is seen to be only a particular case, or limit, of a hyperbolic paraboloid; a cylinder and a cone to be only extreme cases of a hyperboloid of one sheet, etc.

At the same time the singular beauty of form and color which the models possess, arouses the admiration of those entirely ignorant of their mathematical attractions.

Prof. *Bardin's* (Paris) plaster models (seventy) of the INTERSECTIONS of prisms, pyramids, cylinders, cones, etc.

Schroeder's (Darmstadt) models (twenty) of elementary DESCRIPTIVE GEOMETRY. The planes of projection are in wood, and the lines and surfaces in metal; models illustrating Shades and Shadows.

STONE CUTTING models (twenty) in plaster, selected from those of *L'Ecole Polytechnique* Paris.

Prof. *Bardin's* models (ten) in plaster, of OBLIQUE ARCHES.

Groined and cloistered arch models (ten) in wood and plaster
Models of structures in stone, consisting of bridges, culverts, etc.

Winding stair models in wood and plaster. Full sized models of voussoirs and skew-backs of an oblique arch.

MODELS IN TOPOGRAPHY: French and German plaster models, giving all the different forms of ground, accompanied by topographical drawings showing how to represent these forms by contour lines, hatchings and shades from vertical and oblique light; Models and Maps in Colored Topography; A large Model of Mont Cenis Pass, showing the wagon road and contour lines.

ARCHITECTURE: Models of the five orders of Architecture from *L'Ecole des Beaux Arts*, Paris; Portals; Stairs; Roofs; Walls; Buttresses; Domes, etc.

ENGINEERING: Schroeder's models of joints, brick bonds, etc.; spur wheels, bevel wheels; cranes; pile driver; various forms of water wheels; pumps; cylinders; valves, eccentrics, etc.; steam engines.

Casts of St. Venant's models showing the changes of form in bodies subjected to flexure. Full sized model of the liquid vein measured by Poncelet and Lesbros.

Models of Bridges on various systems, comprising truss, suspension, tubular and arch bridges; Doyné's Dynamometer Bridge model, showing by means of a Dynamometer the strains at different points; models of roof trusses, arranged for using the Dynamometer to show the different stresses.

Models of Fortifications, illustrating Vauban's system; shot, shell, etc.

Models of Culverts, Piers, Abutments, Culvert Heads, Recess Pool, Wing Walls, Rail Sections, etc.

PHYSICAL APPARATUS.

The collection of apparatus for illustrating the several branches of Natural Philosophy, is very extensive. The latest and best which home and foreign workshops can produce, have been procured, in order to render the collection as complete as possible.

FOR PRECISE MEASUREMENTS: Steel scales of English and French measures; graduated vessels of various measures and volumes; balances by Becker and other makers; Spherometer by Buff and Berger; Wollaston's goniometer; Theodolites, etc.

COLLECTIONS IN THE DEPARTMENT OF CHEMISTRY.

IN MINERALOGY: The Wheatley Collection contains nearly 4000 specimens of minerals, the result of the labors of Charles M. Wheatley. All of these have been labeled according to the nomenclature and order adopted by Dana. They are without exception open at all times to the students. They furnish an admirable means of practical illustration in Mineralogy, the mineralogical recitation room being connected with the large hall. Among the rare and valuable specimens are those of Anglesite, Cerusite, Mimetine and Calcopryrite, which in American specimens are only equalled by those in the British Museum. The specimens of Pennsylvania pyromorphite are unequalled in any other collection. There are also many fine specimens representing the noble metals from all parts of the world. There are very few species known of minerals of which the collection does not contain some specimens.

In addition to this there is a large series of unlabeled specimens for crystallographic and blow pipe examination.

IN METALLURGY : The College possesses a suite of ores of the useful metals comprising over 1000 specimens. These have been arranged to illustrate their mode of occurrence and geographical distribution. In addition are the fluxes, fuels, etc., used in obtaining the metals from the ores, together with the slags and metals themselves in various forms. There is a large number of models and drawings of stacks, furnaces, etc. Also suites of specimens of wood, charcoal, mineral coal, peat, etc., both for actual examination and for physical inspection, also specimens of most of the useful alloys.

IN INDUSTRIAL CHEMISTRY : A large number of specimens of the materials used in the manufacture of the mineral and some of the organic acids. The crude products themselves and the materials used in the manufacture of the alkalies ; soaps, matches ; black lead ; candles ; petroleum products ; linseed, olive, castor, cotton seed and other oils ; paper ; porcelain ; glass ; fire and building brick ; mortar and cements ; beet and cane sugars ; white lead and other paints ; etc., etc.

IN AGRICULTURAL CHEMISTRY : For the study of this branch of chemistry the College has a large suite of specimens of manures natural and commercial, together with the apparatus for their analysis and also the analysis of soils.

The Chemical Laboratory is well furnished with apparatus for work both in analytical and manufacturing chemistry.

MAPS, DRAWINGS, ETC.

This collection embraces a large number of maps, plates, profiles, topographical drawings and spherical projections ; about fifty thousand engravings, lithographs, photographs,

and detail drawings of Engineering and Architectural Structures; working drawings of machines, bridges, buildings, etc.

LIBRARY.

The students have the use of the College and Society Libraries. A large room has been elegantly fitted up for the accommodation of the Library, so that students can have access to it at all times for consultation. It has received extensive and valuable additions by the purchase of the Engineering and Scientific Library belonging to the late Professor Gillespie. A recent endowment of twenty thousand dollars puts the Library on an independent foundation, so that it will be kept up with the advance of science.

READING ROOM.

The Gillespie Club, a Society of Engineers, have a reading room well supplied with Newspapers, Magazines and the principal Engineering and Scientific Journals.

PHYSICAL CULTURE.

The students are instructed in Military tactics by an officer of the U. S. Army; and a large Gymnasium completely furnished affords ample opportunities for physical training.

For catalogues or for special information address C. STALEY, Schenectady, N. Y.

Course of Studies.

ARRANGED BY TERMS.

FRESHMAN CLASS.

FIRST TERM.

English language.
French Grammar..... *Pujol*
Algebra — (continued) — to "Series"..... *Davies*
Drawing.

SECOND TERM.

History.
French Grammar and Reader..... *Pujol*
Algebra (completed).... *Davies*
Drawing — Plane Problems.

THIRD TERM.

Rhetoric.
French Grammar and Reader..... *Pujol*
Geometry — Books VI — IX..... *Legendre*
Trigonometry — Plane and Spherical..... *Jackson*
Calculations ; rapid, accurate and approximate.

(*Physical culture three hours a week and English Composition throughout the year.*)

SOPHOMORE CLASS.

FIRST TERM.

French Poetry.
German Grammar..... *Comfort*
Descriptive Geometry..... *Church*
Rhetoric..... *Whateley*
Analytical Geometry.

SECOND TERM.

Contemporaneous French Literature.
German Grammar and Reader..... *Whitney*
Calculus.

Descriptive Geometry	<i>Church</i>
Mensuration	<i>Price</i>
Logic	<i>Whateley</i>
Drawing — Shades and shadows.	

THIRD TERM.

Contemporaneous French Literature.	
German Grammar and Reader.	
Statics and Dynamics.....	<i>Jackson</i>
Surveying	<i>Gillespie</i>
Calculus.	

(*Physical culture three hours a week and English Composition throughout the year*).

JUNIOR CLASS.

FIRST TERM.

German Literature	<i>Woodbury's Reader</i>
Hydrostatics, Hydrodynamics and Pneumatics	<i>Jackson</i>
Surveying	<i>Gillespie</i>
Machines.	
Political Economy.	

SECOND TERM.

German Literature.....	<i>Whitney's Reader</i>
Electricity, Magnetism, Galvanism	<i>Foster</i>
Physiology.....	<i>Huxley</i>
Calculus.....	<i>Davies</i>
Drawing — Oblique Projection.	

THIRD TERM.

Chemistry	<i>Cooke</i>
Heat, Steam Engine	<i>Foster</i>
Strength of Materials.....	<i>Gillespie</i>
Zoology.	
Topographical Mapping.	

(*Physical culture three hours a week and Composition and Declamation throughout the year*.)

SENIOR CLASS.

FIRST TERM.

Road Engineering	<i>Gillespie</i>
Geology.....	<i>Dana</i>
Optics.....	<i>Jackson</i>
Chemistry	<i>Cooke</i>
Stability of Structures	<i>Gillespie</i>

SECOND TERM.

Engineering Construction.	
Astronomy	<i>Gummere</i>
Metallurgy.	
Ethics.	
Drawing.	

THIRD TERM.

Physical Laboratory.	
Physical Geography.	
Moral Philosophy.	
Law of Contracts and Right of Way.	
Botany.	
Thesis.	

(Throughout the year, physical culture three hours a week and Rhetorical Exercises.)

NOTE.

Amendment of Rules for admission of Attorneys to Supreme Court.

“ An allowance of one year shall be made to applicants who are graduates of any college or university, who, in their course of study, shall have been instructed in the theory and general principles of jurisprudence, and in the historical development of the constitutional law of the United States and Great Britain, the proof of which shall be the certificate of the President of the College where such applicant graduated, to the satisfaction of the Supreme Court, that he has been taught and sustained a satisfactory examination in said studies, specifying the same, and no other allowance shall be made to such applicants for study, prior to the time of graduation, which time shall be made to appear.”

Adopted Sept. 22, 1875.

Signed	S. E. CHURCH,
	W. F. ALLEN,
	CHARLES A. RAPALLO,
	CHARLES J. FOLGER,
	CHARLES ANDREWS,
	THEODORE MILLER.

The above is inserted for the information of students and those whom it may concern, the course of studies of the Senior year having been so readjusted as to meet the requirements of the amendment and to entitle graduates hereafter to the “allowance of one year.”

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